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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 16

Application Number: 09/388,609
Filing Date: September 02, 1999
Appellant(s): MEKURIA, FISSEHA

Joseph A. Rhoa
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed July 15, 2002.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

The rejection of claims 1-13 stand or fall together because although appellant's brief does include a statement that this grouping of claims does not stand or fall together, the brief fails to provide sufficient and explicit reasons in support thereof. See 37 CFR 1.192(c)(7).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5752232	BASORE ET AL	05-1998
5515475	GUPTA ET AL	05-1996

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Basore et al (US Patent No. 5,752,232), hereinafter referred to as Basore, in view of Gupta et al (US Patent No. 5,515,475), hereinafter referred to as Gupta.

Basore teaches a voice activated device and method for providing access to remotely retrieved data, which allows a user to select and retrieve specific application data and information via speech recognition.

Regarding claim 1, Basore teaches a voice activated device using speaker independent speech recognition (col. 1, lines 49-50) such that the system includes a cordless handset, at Figure 1, element 110, col. 2, lines 20-21, which reads on " a speech recognition system in a mobile telephone."

Additionally, Basore teaches an application memory unit which stores the phonetic spellings of certain words used in a particular application and provides examples of the different applications that may be used with the system at col. 3, lines 40-41 and col. 4, lines 22-29, which reads on "a stored vocabulary" and "a plurality of different groups of words". Basore teaches that the vocabulary is stored in a database or dictionary, but does not specifically disclose the

structure as a trellis. However, implementation of a trellis or tree structure for storing a speech recognition vocabulary is well known in the art.

In a similar field of endeavor, Gupta teach a speech recognition method, which implements trellis/tree structures for matching spoken utterances to stored vocabulary words (abstract: col. 4, lines 4-14) for the purpose of reducing the time taken to match a vocabulary word to a spoken utterance and thereby reducing recognition time delay without sacrificing accuracy of recognition (col. 2, lines 12-20).

Therefore, it would have been obvious to one of ordinary skill at the time of invention to modify the voice activated recognition system of Basore to implement the trellis/tree recognition methods of Gupta et al, for the purpose of reducing the time taken to match a vocabulary word to a spoken utterance and thereby reducing recognition time delay without sacrificing accuracy of recognition, as suggested by Gupta.

Additionally, Basore discloses the user issues a first command (col. 4, line 49) to select one of the applications. When the user speaks the command "Help", the system provides the active vocabulary of the selected application (col. 5, lines 20-31). Col. 5, lines 31-40 further illustrates the exchange of commands from the user and responses from the system using the selected TV schedule application. Thus, the user issuing the spoken command of "TV schedule" selects the TV schedule application and activates (or selects) the TV schedule vocabulary. When the system prompts the user with "would you like categories under sports, movies series, specials, news or other" implies the user is prompted to speak one of these categories, and that the recognition vocabulary is selected only from the limited group of words, which reads on "a word group selection system for enabling a user to speak via voice commands

to select at least a first of said plurality of different groups of words, said first group of words being selected based upon at least a word spoken by the user, so that a limited number of groups of the entire vocabulary, less than said plurality, is searched for a word during subsequent speech recognition processes in the mobile telephone after selection of at least the first of said plurality of groups of words."

Regarding claim 2, Basore and Gupta discloses everything as claimed in claim 1. Additionally, the trellis teachings of Gupta (abstract: col. 4, lines 4-14), reads on "vocabulary arranged in a tree structure."

Regarding claim 3, Basore and Gupta discloses everything as claimed in claim 1. Additionally, Basore teaches that the system communicates with the user via a text-to-speech unit, a printer or a display screen at col. 5, lines 9-40, which reads on "outputting the words that the system is set to recognize."

Regarding claim 4, Basore and Gupta discloses everything as claimed in claim 3. Additionally, Basore teaches that the system communicates with the user via voice prompts with a text-to-speech unit at col. 4, lines 13-21 and col. 5, lines 18-21, which reads on "voice prompter."

Regarding claim 5, Basore and Gupta teach everything as claimed in claim 1. However, neither Basore nor Gupta specifically teach an automatically generating a new group if a number of words in one group exceeds a certain, pre-set threshold value.

However, it would have been obvious to one of ordinary skill at the time of invention to modify Basore et al to generate new groups or menus of words when the size of the word list

exceeds a certain number, for the purpose of reducing the number of words output to the user during enunciation or display of active vocabulary words.

Regarding claim 6, Basore teaches a voice activated device using speaker independent speech recognition (col. 1, lines 49-50) such that the system includes a cordless handset, at Figure 1, element 110, col. 2, lines 20-21, which reads on " providing a speech recognition system in a mobile telephone."

Additionally, Basore teaches an application memory unit which stores the phonetic spellings of certain words used in a particular application and provides examples of the different applications that may be used with the system at col. 3, lines 40-41 and col. 4, lines 22-29, which reads on "a stored vocabulary" and "a plurality of different groups of words". Basore teaches that the vocabulary is stored in a database or dictionary, but does not specifically disclose the structure as a trellis. However, implementation of a trellis or tree structure for storing a speech recognition vocabulary is well known in the art.

In a similar field of endeavor, Gupta teach a speech recognition method, which implements trellis/tree structures for matching spoken utterances to stored vocabulary words (abstract: col. 4, lines 4-14) for the purpose of reducing the time taken to match a vocabulary word to a spoken utterance and thereby reducing recognition time delay without sacrificing accuracy of recognition (col. 2, lines 12-20).

Therefore, it would have been obvious to one of ordinary skill at the time of invention to modify the voice activated recognition system of Basore to implement the trellis/tree recognition methods of Gupta et al, for the purpose of reducing the time taken to match a vocabulary word to

a spoken utterance and thereby reducing recognition time delay without sacrificing accuracy of recognition, as suggested by Gupta.

Additionally, Basore discloses the user issues a first command (col. 4, line 49) to select one of the applications. When the user speaks the command "Help", the system provides the active vocabulary of the selected application (col. 5, lines 20-31). Col. 5, lines 31-40 further illustrates the exchange of commands from the user and responses from the system using the selected TV schedule application. Thus, the user issuing the spoken command of "TV schedule" selects the TV schedule application and activates (or selects) the TV schedule vocabulary. When the system prompts the user with "would you like categories under sports, movies series, specials, news or other" implies the user is prompted to speak one of these categories, and that the recognition vocabulary is selected only from the limited group of words, which reads on "providing a word group selection system for enabling a user to speak via voice commands to select at least a first of said plurality of different groups of words, said first group of words being selected based upon at least a word spoken by the user, so that a limited number of groups of the entire vocabulary, less than said plurality, is searched for a word during subsequent speech recognition processes in the mobile telephone after selection of at least the first of said plurality of groups of words."

Regarding claim 7, Basore and Gupta discloses everything as claimed in claim 6. Additionally, the trellis teachings of Gupta (abstract: col. 4, lines 4-14), reads on "vocabulary arranged in a tree structure."

Regarding claim 8, Basore and Gupta discloses everything as claimed in claim 7. Additionally, Basore teaches that the system communicates with the user via a text-to-speech

unit, a printer or a display screen at col. 5, lines 9-40, which reads on "outputting the words that the system is set to recognize."

Regarding claim 9, Basore and Gupta discloses everything as claimed in claim 8. Additionally, Basore teaches that the system communicates with the user via voice prompts with a text-to-speech unit at col. 4, lines 13-21 and col. 5, lines 18-21, which reads on "voice prompter."

Regarding claim 10, Basore and Gupta teach everything as claimed in claim 6. However, neither Basore nor Gupta specifically teach automatically generating a new group if a number of words in one group exceed a certain, pre-set threshold value.

However, it would have been obvious to one of ordinary skill at the time of invention to modify Basore et al to generate new groups or menus of words when the size of the word list exceeds a certain number, for the purpose of reducing the number of words output to the user during enunciation or display of active vocabulary words.

Regarding claim 11, Basore and Gupta teach everything as claimed in claim 1. However, neither Basore nor Gupta specifically teach automatically generating a new group if a number of words in one group exceed a certain, pre-set threshold value.

However, it would have been obvious to one of ordinary skill at the time of invention to modify Basore et al to generate new groups or menus of words when the size of the word list exceeds a certain number, for the purpose of reducing the number of words output to the user during enunciation or display of active vocabulary words.

Regarding claim 12, Basore teaches a voice activated device using speaker independent speech recognition (col. 1, lines 49-50) such that the system includes a cordless handset, at

Figure 1, element 110, col. 2, lines 20-21, which reads on " a speech recognition system in a mobile telephone."

Additionally, Basore teaches an application memory unit which stores the phonetic spellings of certain words used in a particular application and provides examples of the different applications that may be used with the system at col. 3, lines 40-41 and col. 4, lines 22-29, which reads on "means for storing a word vocabulary" and "words in the vocabulary are arranged in a plurality of different groups of words". Basore teaches that the vocabulary is stored in a database or dictionary, but does not specifically disclose the structure as a trellis. However, implementation of a trellis or tree structure for storing a speech recognition vocabulary is well known in the art.

In a similar field of endeavor, Gupta teach a speech recognition method, which implements trellis/tree structures for matching spoken utterances to stored vocabulary words (abstract: col. 4, lines 4-14) for the purpose of reducing the time taken to match a vocabulary word to a spoken utterance and thereby reducing recognition time delay without sacrificing accuracy of recognition (col. 2, lines 12-20).

Therefore, it would have been obvious to one of ordinary skill at the time of invention to modify the voice activated recognition system of Basore to implement the trellis/tree recognition methods of Gupta et al, for the purpose of reducing the time taken to match a vocabulary word to a spoken utterance and thereby reducing recognition time delay without sacrificing accuracy of recognition, as suggested by Gupta.

Additionally, Basore discloses the user issues a first command (col. 4, line 49) to select one of the applications. When the user speaks the command "Help", the system provides the

active vocabulary of the selected application (col. 5, lines 20-31). Col. 5, lines 31-40 further illustrates the exchange of commands from the user and responses from the system using the selected TV schedule application. Thus, the user issuing the spoken command of "TV schedule" selects the TV schedule application and activates (or selects) the TV schedule vocabulary. When the system prompts the user with "would you like categories under sports, movies series, specials, news or other" implies the user is prompted to speak one of these categories, and that the recognition vocabulary is selected only from the limited group of words, which reads on "word group selection means for enabling a user to speak via voice commands into the mobile telephone to select a first of said plurality of different groups of words, said first group of words being selected based upon at least a word spoken by the user, and speech recognition means for comparing input speech from a user to words in said selected first group of words, so that comparing of the input speech is performed relative to said selected first group of words prior to comparing the input speech with other of the plurality of different groups of words so that a limited number of groups of the entire vocabulary is searched via said comparing during speech recognition processes."

Regarding claim 13, Basore and Gupta teach everything as claimed in claim 12. However, neither Basore nor Gupta specifically teach automatically generating a new group if a number of words in one group exceed a certain, pre-set threshold value.

However, it would have been obvious to one of ordinary skill at the time of invention to modify Basore et al to generate new groups or menus of words when the size of the word list exceeds a certain number, for the purpose of reducing the number of words output to the user during enunciation or display of active vocabulary words.

(11) Response to Argument

Applicant's arguments filed July 15, 2002 have been fully considered but they are not persuasive.

Regarding claims 1, 2-4 and 6-9, at page 4 of the brief, applicant argues that Basore fails to disclose or suggest selection of a group of words based on a word spoken by a user, and thereafter in subsequent speech recognition processes searching only that selected group of words for recognizing speech input. The Examiner disagrees, and argues that Basore "selects the active vocabulary in the dictionary 127 according to the application and according to the previous command or commands" (col. 5, lines 26-28). While this necessarily also affects the next response, the response words include the restricted set of command words that will be recognized during the next step. Thus, the "sports, movies, series, specials, news or other" (in the response cited in lines 35-36) implies the user is prompted to speak one of these categories, and that the recognition vocabulary is selected only therefrom. Similar restriction is implied as well as for "further exchanges of spoken commands" (lines 36-37).

At page 5 of the brief, applicant argues that Gupta fails to disclose how the number of searched words can be restricted by limiting the search to a group of words at a time. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In this instance, the disclosure of Gupta was cited as teaching the structure of the recognition vocabulary. The Basore reference is cited as disclosing selecting a group of words, less than a plurality of groups of words, for restricting the recognition search to a limited group of words, as indicated in the Final Office Action and the rejection above.

At page 5, applicant argues that the combination of Basore and Gupta fail to disclose or suggest the invention of claim 1 because allegedly neither reference discloses or suggest selection of a group of words based on a word spoken by a user, and thereafter in subsequent speech recognition processes searching only that selected group of words for recognizing speech input. The Examiner disagrees and contends that Basore clearly teaches selection of a limited recognition vocabulary (col. 5, lines 25-37).

Applicant further argues that the trellis structure of Gupta is not used for searching among a limited number of word groups. In response, the examiner argues that the disclosure of Gupta was cited as teaching the structure of the recognition vocabulary, as indicated in the Final Office Action and the rejection above.

Regarding claim 5, at page 6 applicant argues that the references fail to disclose or suggest the limitations of claim 5. In response, the Examiner argues, as argued in the Final Office Action and in the rejection above, generating new groups or menus of words when the size of the word list exceeds a certain number is an obvious modification to the system of Basore because such a modification would reduce the number of words output to the user during enunciation or display of the active vocabulary words. Support for such modification in a speech recognition system is suggested by White (US Patent No. 5,386,494). White discloses a method and apparatus for controlling speech recognition, which utilizes a voice pull down menu

format that can be used to display voice commands (col. 8, lines 43-57). The system functions to provide a voice menu that is uncluttered by shortening the list of all recognizable commands to create groups of synonym menus, which makes the selection of commands easier (col. 9, lines 4-12).

Regarding claim 11, at page 6 applicant argues that the references fail to disclose or suggest the limitations of claim 11. In response, the Examiner argues, as argued in the Final Office Action and in the rejection above, providing for new groups of words for storage in the vocabulary when the size of the word list exceeds a certain number is an obvious modification to the system of Basore because such a modification would reduce the number of words output to the user during enunciation or display of the active vocabulary words. The teaching of such a modification in a speech recognition environment is suggested by White (as presented in the arguments regarding claim 5).

Regarding claim 12, at page 7 applicant argues that the cited prior art taken alone or in combination fails to disclose or suggest the aspects of claim 12. The Examiner disagrees and argues that the combination of Basore and Gupta would specifically provide for a speech recognition system for use with a telephone that provided a vocabulary stored in a database or dictionary (as provided by Basore), such that the vocabulary is stored in trellis structure (as provided by Gupta). The system functioning to allow a user to utter voice command via the telephone, in which a word or command uttered by the user selects a limited group of words from plurality of groups for speech recognition processing (as provided by Basore).

Applicant further argues that the trellis structure of Gupta is not used for searching among a limited number of word groups. In response, the examiner argues that the disclosure of

Gupta was cited as teaching the structure of the recognition vocabulary, as indicated in the Final Office Action and the rejection above.

Regarding claim 13, at page 8 applicant argues that the references fail to disclose or suggest the limitations of claim 13. In response, the Examiner argues, as argued in the Final Office Action and in the rejection above, generating new groups of words for storage in the vocabulary when the size of the word list exceeds a certain number is an obvious modification to the system of Basore because such a modification would reduce the number of words output to the user during enunciation or display of the active vocabulary words. The teaching of such modifications in a speech recognition environment is suggested by White (as presented in the arguments regarding claim 5).

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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